

Isabel Rojas-Ferrer, M.Sc.

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Current position

Department of Biology- Ph.D. candidate (*to be obtained May 2021*)
University of Ottawa, Ottawa, ON, Canada

Research interests

Cognitive Ecology
Behavior
Evolution
Game Theory
Science communication

Education

2016-present	University of Ottawa Ph.D. in Biology
2014- 2016	University of Missouri- Saint Louis M.Sc. in Ecology, Evolution and Systematics
2006- 2014	University of Puerto Rico - Mayagüez BS in Industrial Microbiology
2006-2009	Residential Center of Educative Opportunities of Mayagüez (CROEM) High School Diploma

Research experience

Present	Collaboration with Dr. Julie Morand-Ferron and Dr. Lewis <i>Research Topic:</i> Producer-scrrounger game dynamic model
Present	Graduate Research under Dr. Julie Morand-Ferron <i>Research Topic:</i> What makes a producer? Experience, fear, and learning performance as predictors for social-foraging strategy
Fall-Present	Graduate Research under Dr. Julie Morand-Ferron <i>Research Topic:</i> The developmental effects of information-gathering on animal personalities and learning abilities of captive zebra finches (<i>Taeniopygia guttata</i>)
Fall-Winter 2016	Graduate Research under Dr. Julie Morand-Ferron <i>Research Topic:</i> Is exploration a metric for information gathering? Attraction to novelty and plasticity in black-capped chickadees

- Spring
2016 Graduate Research under Dr. Aimee Dunlap, University of Missouri-Saint Louis
Research Topic: Predicting choices in bumblebees (*Bombus impatiens*): Learning rules and the two-armed bandit
- Spring
2015 Graduate Research under Dr. Aimee Dunlap, University of Missouri-Saint Louis
Research Topic: Are social foraging decisions frequency-dependent? A producer-scrounger framework for bumblebees (*Bombus impatiens*)
- Fall
2014 Graduate Research under Dr. Aimee Dunlap, University of Missouri-Saint Louis
Research Topic: Learning costs in *Drosophila melanogaster*
- Fall
2012-2014 Undergraduate Research under Dr. David Logue, University of Puerto Rico, Mayagüez
Research Topic: You either have it, or you don't: Looking for rhythm in songs of the Venezuelan troupial (*Icterus icterus*)
- Summer
2012 Undergraduate Research under Dr. Emilia Martins, CISAB, University of Indiana, Bloomington
Research Topic: Habitat heterogeneity influences social interactions in Zebrafish (*Danio rerio*)
- Spring
2011 Undergraduate Research under Dr. Dimaris Acosta, University of Puerto Rico, Mayagüez
Research Topic: Evaluation of the effect of sampling day in the abundance of ciliates in an artificial micro-cosmos

Publications

- Rojas-Ferrer, Isabel, and Julie Morand-Ferron. "The impact of learning opportunities on the development of learning and decision-making: an experiment with passerine birds." Philosophical Transactions of the Royal Society B 375.1803 (2020): 20190496.
- Rojas-Ferrer, Isabel, Megan Joy Thompson, and Julie Morand-Ferron. "Is exploration a metric for information gathering? Attraction to novelty and plasticity in black-capped chickadees." Ethology 126.4 (2020): 383-392.
- Rojas-Ferrer, Isabel, and Aimee Dunlap. Predicting bumblebee (*Bombus impatiens*) foraging choice with the use of learning rules. (*in preparation*)
- Rojas-Ferrer, Isabel, Sanjay Prasher, and Julie Morand-Ferron What makes a producer? Experience, fear, and learning performance as predictors for social-foraging strategy. (*in preparation*)

Teaching experience and mentoring

Fall 2019	Mentoring- Sophie St. Lawrence (Undergraduate, University of Ottawa) Assisted in the development, experimental design, data collection, and analysis of a guided honors project on behavioral plasticity.
Spring 2018	Graduate teaching assistant under Dr. Lucas, University of Ottawa <i>Demonstrator:</i> The neural basis of animal behavior/ Neuroethology My task included the grading and preparation of lectures and assignments, as well as student supervision.
Fall 2018	Graduate teaching assistant under Dr. Forrest, University of Ottawa <i>Demonstrator:</i> Population biology My task included the grading assignments, as well as student supervision.
Spring 2017	Graduate teaching assistant under Dr. Morand-Ferron, University of Ottawa <i>Demonstrator:</i> Experiments in Animal Behavior My task included the grading and preparation of lectures and assignments, as well as student supervision.
Winter 2016	Graduate teaching assistant under Dr. Kerr, University of Ottawa <i>Demonstrator:</i> Spatial Ecology My task included the grading and student supervision.
Fall 2016	Graduate teaching assistant under Dr. Avaron, University of Ottawa <i>Demonstrator:</i> Organismal Biology My task included the grading and preparation of lectures and assignments, as well as student supervision.
Spring 2016	Graduate teaching assistant under Dr. Aimee Dunlap, University of Missouri-Saint Louis <i>Coordinator:</i> Animal Behavior My tasks included building the course content for every lecture and prepare the visual material for the course. Additionally, I was in charge of the care and handling of the animals.
Fall 2015	Graduate teaching assistant under Dr. Patricia Parker, University of Missouri- Saint Louis <i>Teaching:</i> Evolution My tasks included developing assignment and grading rubrics, grading assignments and exams, supervising students, and helping students with the class.
Summer 2014	Mentoring- Bola Fatoki (Highschool, University of Missouri- St Louis)

CURRICULUM VITAE

Developing their scientific understanding by reading and discussing scientific papers on a weekly basis and expanding on their general science knowledge by including them in the experimental design process. Assisting on research presentations and the writing of scientific paper.

Summer
2014

Mentoring- Mateena Lewis

(Undergraduate, University of Missouri- St Louis)

Developing their scientific understanding by reading and discussing scientific papers on a weekly basis and expanding on their general science knowledge by including them in the experimental design process.

Summer
2014

Mentoring- Sara Wyne

(Undergraduate, University of Missouri- St Louis)

Developing their scientific understanding by reading and discussing scientific papers on a weekly basis and expanding on their general science knowledge by including them in the experimental design process. Assisting with the writing of a scientific paper.

Spring
2014

Graduate teaching assistant under Dr. Aimee Dunlap, University of Missouri- Saint Louis

Teaching: Animal Behavior Laboratory

My tasks included organizing and overseeing lectures, developing assignment and grading rubrics, grading assignments, supervising students, leading paper discussions, and handling animals.

Professional experience

Spring 2018 Special lecture for Neuroethology course at the University of Ottawa:
The neural basis of signal of signal detection theory

2018- Present (Elected) Vice-President of the Biology Graduate Student Association
at the University of Ottawa

2017-Present Manager of the University of Ottawa zebra finch aviary facility

Fall 2017 Member of the organizing committee for the 42nd annual meeting of
SQEBC

2017-Present Founder of the Animal Behavior Discussion Group, University
of Ottawa

My tasks include organizing and moderating scientific journal articles
discussions on a weekly basis

2016-Present

Graduate research assistant under Dr. Julie Morand-Ferron, University
of Ottawa

My tasks include field work where I had to practice mist netting, the
capture and handling, and recording of Black-capped Chickadees
(*Poecile atricapillus*). Furthermore, I care for captive zebra finches
(*Taeniopygia guttata*) which includes the organization and running of

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	experiments, up-keep of the lab facilities, as well as the administration of medication and handling of the animals.
Spring 2016	Graduate research assistant under Dr. Aimee Dunlap, University of Missouri- Saint Louis My tasks included handling and caring for colonies of <i>Bombus impatiens</i> , developing the methods and analyzing results using Microsoft excel, Matlab and R, and constructing experimental arena.
Fall 2014	Graduate research assistant under Dr. Aimee Dunlap, University of Missouri- Saint Louis My tasks included handling and caring for various experimental lines of <i>Drosophila melanogaster</i> , developing the methods and analyzing results using Microsoft excel.
2007- 2014	Veterinary Assistant My tasks included handling and caring for animals, costumer management, preparation of medication, cleaning procedures, and medical assistance.
Summer 2009	Shadowing- Assistant in the Area of Biology and Veterinary Medicine in the Dr. Juan A. Rivero Zoo in Maygüez, Puerto Rico
Summer 2006	Volunteer- Villa Michelle Animal Shelter, Mayagüez, Puerto Rico

Fellowships and honors

2016	Partial International Admission Scholarship (University of Ottawa)
2013	Turner Travel Award
2013	Howard Hughes Medical Institute Travel Award (\$1,341.00)

Research presentations

2020	Animal Behavioral Society Conference, Virtual-presentation
2019	Société Québécoise pour l'Étude Biologique du Comportement, Presentation (McGill University, Montreal, Canada)
2019	Ontario Ecology, Ethology, and Evolution Colloquium, Presentation (McMaster University, Canada)
2018	Invited speaker- UPRM Undergraduate Research Symposium, Presentation (Universidad de Puerto Rico, Mayagüez)
2017	Société Québécoise pour l'Étude Biologique du Comportement, Presentation (University of Ottawa, Canada)
2017	Animal Behavioral Society Conference, Presentation (University of Toronto-Scarborough, Canada)
2016	Société Québécoise pour l'Étude Biologique du Comportement, Presentation (University of Quebec, Rimouski, Canada)
2016	Thesis Defense, Presentation, (University of Missouri-Saint Louis)
2016	Biolunch, Presentation (University of Missouri-Saint Louis)
2015	Biology Graduate Student Association Symposium, Presentation (University of Missouri-Saint Louis)
2014	Biology Graduate Student Association Symposium, Presentation (University of Missouri-Saint Louis)

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- 2013 UPRM Undergraduate Research Symposium, Presentation (University of Puerto Rico- Mayagüez)
- 2013 Animal Behavior Society Conference, Poster (University of Colorado-Boulder)
- 2012 Center for the Integrative Study of Animal Behavior, Presentation (Indiana University-Bloomington)

Outreach

- 2019 Invited speaker- Soapbox Science, Ottawa Ontario
- 2018 Invited participant- Roundtable discussion on the next generation of women in STEM with the Minister of Science, Kirsty Duncan
- 2018 Diversity in Ecology- Invited guest post at the Journal of Animal Ecology
- 2017 Nature Canada: International Bird Day, Ottawa, Ontario
- 2016 Mentor in Project Lead the Way, Jennings Senior High School, Saint Louis, Missouri
- 2016 Biology Graduate Student Association- The bird and bat house building community workshop, Saint Louis, Missouri
- 2016 Jennings Senior High School Career Day, Saint Louis, Missouri

Skills

Fluent in Spanish and English	Preparation of Medication (dosage, instructions, handling)
Microsoft Word	Assistance in surgical procedures
Microsoft Excel	Cleaning procedures
Microsoft Power Point	Client orientation
ImageJ	Identification of parasites by microscope
Syrinx Bioanalytics	Gram staining
Administration of medication via IV and IM	Use of snap test
Animal Handling	R programming language
Data Collection	MATLAB programming language
Teaching	
Data entry and report writing	

Complementary courses

Dynamic Modelling, University of Ottawa-Ottawa, ON

Applied Biostatistics, Carleton University- Ottawa, ON

Advanced Behavioral Ecology, Carleton University- Ottawa, ON

Theory of Systematics, University of Missouri- Saint Louis

Advanced Population Biology, University of Missouri- Saint Louis

Ethical Issues in Biology, University of Missouri- Saint Louis

Advanced Evolution, University of Missouri- Saint Louis

Biodiversity: Patterns and Processes (Seminar), University of Missouri- Saint Louis

Floristic Taxonomy (Seminar), University of Missouri- Saint Louis

Bayesian Data Analysis, University of Missouri- Saint Louis

Applied Statistics 1 and 2, University of Puerto Rico

Animal Communication, University of Puerto Rico

Behavioral Ecology, University of Puerto Rico

Animal Behavior, University of Puerto Rico

Calculus 1 and 2, University of Puerto Rico

French, University of Puerto Rico

References

Dr. Julie Morand- Ferron

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Dr. David Logue

University of Lethbridge
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Dr. Aimee Dunlap

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Dr. Zuleyma Tang-Martinez

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